

Phenomenology of open and hidden charmed mesons within a chiral approach

Content

We compute masses of open and hidden charmed mesons in the framework of the extended Linear Sigma Model (eLSM) with (pseudo-)scalar and (axial-) vector mesons. Open charmed mesons masses turn out to be in quantitative agreement with experimental data. Whereas the masses of hidden charmed mesons, with the exception of J/ψ , are underpredicted by about 10%. We calculate the (OZI-dominant) strong decays of open charmed mesons and the (OZI-suppressed) decays of the (pseudo-)scalar hidden charmed mesons. This produces decays into ‘ordinary’ mesons, a predominantly scalar glueball $f_0(1710)$ and a pseudoscalar glueball. The results of decay widths are reasonable compatible with the experimental data where available. While the predictions for as yet unmeasured channels are potentially interesting for Belle II, BESIII, LHCb as well as the upcoming PANDA experiment at the FAIR facility.

Summary

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